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EVALUATION OF AN ENGELMANN SPRUCE BEETLE INFESTATION ON THE SULLIVAN LAKE DISTRICT, COLVILLE NATIONAL FOREST, WASHINGTON

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A helispot was constructed in a mature stand of Engelmann spruce - alpine fir in the South Fork Salmo River drainage, Sullivan Lake Ranger District in 1969. Construction involved clearing a patch of approximately six acres which resulted in a considerable volume of spruce and fir slash. The spruce slash was subsequently invaded by the Engelmann spruce beetle, Dendroctonus rufipenis (Kirby) which posed a potential threat to trees surrounding the helispot.

The evaluation of spruce beetle population at the Salmo helispot was made August 4, 1971, to determine the potential for tree kill by Engelmann spruce beetle in the area and the need for direct control of broods currently present in the down material.

METHODS - A sample of twenty Engelmann spruce logs and stumps were examined. If Engelmann spruce beetle broods were detected, a 6 x 6 inch bark sample was removed from the tree and a brood count was made.

RESULTS - Engelmann spruce beetle attacks and brood were restricted to a narrow band on the underside of the spruce slash. The remaining portion contained heavy infestations of Ips and the other secondary bark beetles. Ips also occurred in considerable abundance in the zone attacked by the spruce beetle which has undoubtedly resulted in considerable interspecies competition and brood mortality.

Engelmann spruce beetle brood density averaged 36 insects per foot^2 of bark surface on the infested undersides of spruce logs. Brood was predominately mature larvae, pupae and a few callow adults. These will overwinter as adults and emerge during the spring of 1972.

Two spruce adjacent to the helispot were windthrown during the winter of 1970-71. A similar pattern of attack occurred in these trees. Engelmann spruce beetle attacks were again restricted to a narrow band on the undersides of the trees with heavy attacks of Ips in the remainder of the bole.

DISCUSSION AND RECOMMENDATIONS

Sparse spruce beetle attacks and low brood densities in slash resulting from the helispot construction point to little or no potential for attacks in standing green Engelmann spruce next year. Consequently there is no need for direct control action.